CA.M 486 c2

M32 · 459

CANADA

DEPARTMENT OF MINES

HON. MARTIN BURRELL, MINISTER; R. G. McCONNELL, DEPUTY MINISTER

MINES BRANCH

EUGENE HAANEL, PH.D., DIRECTOR

A GENERAL SUMMARY

OF THE

MINERAL PRODUCTION

OF

CANADA

During the Calendar Year

1917

JOHN McLEISH, B.A.

Chief of the Division of Mineral Resources and Statistics.

OTTAWA

J. DE LABROQUERIE TACHÉ

PRINTER TO THE KING'S MOST EXCELLENT MAJESTY

1919

No. 499

DDN

CANADA

DEPARTMENT OF MINES

HON. MARTIN BURRELL, MINISTER; R. G. McCONNELL, DEPUTY MINISTER

MINES BRANCH

EUGENE HAANEL, PH.D., DIRECTOR

A GENERAL SUMMARY

OF THE

MINERAL PRODUCTION

OF

CANADA

During the Calendar Year

1917

JOHN McLEISH, B.A.

Chief of the Division of Mineral Resources and Statistics.

OTTAWA

J. DE LABROQUERIE TACHÉ

PRINTER TO THE KING'S MOST EXCELLENT MAJESTY

1919

51723—1

No. 499

CONTENTS.

	Page.
Mineral production of Canada in 1916 and 1917, comparative table	6
Annual mineral production 1886 to 1917	9
Annual value of metallic and non-metallic production 1907-1917	10
Exports and imports of products of the mine and of manufactures of mine products	11
Production by provinces, 1915, 1916, and 1917	16
Production in Nova Scotia	16
" New Brunswick	16
" Quebec	17
" Ontario	18
" Manitoba	18
" Saskatchewan	19
" Alberta	19
" British Columbia	20
Yukon	20
Mine production	22

ADVANCE CHAPTER OF THE ANNUAL REPORT ON THE MINERAL PRODUCTION OF CANADA, DURING THE CALENDAR YEAR, 1917.

51723—1

THE

MINERAL PRODUCTION OF CANADA

During the Calendar Year

1917

General Summary.

A preliminary report on the mineral production of Canada in 1917 was published on February 26, 1918, the statistical record being at that time partially estimated and therefore subject to revision.

According to the revised statement of mineral production now presented, the total value[1] of the mineral production in 1917 was $189,646,821. This is less than the total value estimated in the preliminary report, the difference being due to over estimates on the value of coal production.

Compared with the total value of the production in 1916 which was $177,201,534, that of 1917 shows an increase of 7·02 per cent and in point of value represents the largest output on record. In the preliminary report it was pointed out and may well be repeated that:—

"It must not be inferred, however, that because such a large increase is shown in the value of our mineral production, our mines and quarries have actually increased their tonnage output at the same average rate. In fact, an examination of the record will show that the quantities of many important products were considerably less in 1917 than in 1916, and over two-thirds of the increase in value is to be attributed to nickel, coal, graphite, gypsum, and cement, in which the quantities marketed were less than in the previous year."

The detailed comparative statement here presented shows the production of each important product during the past two years, the proportion which each contributes to the total production, and the increase or decrease as the case may be of the production in 1917 as compared with that of 1916.

---

[1] In presenting a total valuation of the mineral production as is here given, it should be explained that the production of the metals, copper, gold, lead, nickel, silver, and zinc, is given as far as possible on the basis of the quantities of metals recovered in smelters, and the total quantities in each case are valued at the average market price of the refined metal in a recognized market. There is thus included in some cases the values that have accrued in the smelting or refining of metals outside of Canada.

Comparative Statement of Mineral Production for Years 1916 and 1917.

Product.	1916.			1917.			Increase (+) or Decrease (−).		Increase (+) or Decrease (−).	
	Quantity.	Value (*a*).	Per Cent of Total.	Quantity.	Value (*a*).	Per Cent of Total.	Quantity.	%	Value.	%
Metallic.		$			$				$	
Antimony ore ..... *Tons.	885	94,537	.....	361	22,000	.....	− 524	59·2	− 72,537	76·7
Antimony refined ..... Lbs.	107,185	41,823	.....	.....	.....	.....	− 107,185	100·0	− 41,823	100·0
Cobalt metallic and contained in oxide, etc ..... "	840,536	924,590	0·52	1,079,572	1,727,315	0·91	+ 239,036	28·4	+ 802,725	86·8
Copper (*b*) ..... "	117,150,028	31,867,150	17·98	109,227,332	29,687,989	15·65	− 7,922,696	6·7	− 2,179,161	68·4
Gold ..... Ozs.	930,492	19,234,976	10·85	738,831	15,272,992	8·05	− 191,661	20·6	− 3,961,984	20·6
Iron, pig, from Canadian ore (*c*). ..... Tons.	115,691	1,328,605	0·75	46,022	768,783	0·41	69,669	60·2	− 559,822	42·1
Iron ore sold for export (*k*) ..... "	140,608	393,689	0·22	169,252	590,696	0·31	+ 28,644	20·4	+ 197,007	50·0
Lead (*d*) ..... Lbs.	41,497,615	3,532,692	1·99	32,576,281	3,628,020	1·91	− 8,921,334	21·5	+ 95,328	2·7
Molybdenite ..... "	156,461	156,461	0·09	288,705	288,705	0·15	+ 132,244	84·5	+ 132,244	84·5
Nickel (*e*) ..... "	82,958,564	29,035,498	16·39	82,330,280	33,732,112	17·79	− 628,284	0·8	+ 4,696,614	16·2
Platinum ..... Ozs.	15	600	.....	57	3,823	.....	+ 42	280·0	+ 3,223	537·0
Silver (*f*) ..... "	25,459,741	16,717,121	9·43	22,221,274	18,091,895	9·54	− 3,238,467	12·7	+ 1,374,774	8·2
Zinc ..... Lbs.	23,364,760	2,991,623	1·69	29,668,764	2,640,817	1·39	+ 6,304,004	27·0	− 350,806	11·7
Total	.....	106,319,365	60·00	.....	106,455,147	56·13	.....	.....	+ 135,782	0·1
Non-metallic.										
Actinolite ..... Tons	250	2,750	.....	120	1,320	.....	− 130	52·0	− 1,430	52·0
Arsenic, white and in ore ..... "	2,186	262,349	0·15	2,936	669,431	0·35	+ 750	34·3	+ 407,082	155·2
Asbestos ..... "	134,439	5,199,797	2·93	135,502	7,183,099	3·79	+ 2,063	1·5	+ 1,983,302	38·1
Asbestic ..... "	20,710	29,072	.....	18,279	47,284	.....	− 2,431	11·7	+ 18,212	62·6
Chromite ..... "	27,517	311,460	0·18	36,725	499,682	0·26	+ 9,208	33·5	+ 188,222	60·4
Coal ..... "	14,483,395	38,817,481	21·91	14,016,759	43,199,831	22·78	− 436,636	3·0	+ 4,382,350	11·3
Corundum ..... "	67	10,307	.....	188	32,153	.....	+ 121	180·7	+ 21,846	211·9
Feldspar ..... "	19,488	71,407	.....	19,462	89,826	.....	− 26	0·1	+ 18,419	25·8
Fluorspar ..... "	1,284	10,238	.....	4,249	68,756	.....	+ 2,965	230·9	+ 58,518	571·6
Graphite ..... "	3,955	325,362	0·18	3,714	402,892	0·21	− 241	6·1	+ 77,530	23·8
Graphite, artificial ..... "	263	.....	.....	548	.....	.....	+ 285	108·3	.....	.....
Grindstones ..... "	3,478	52,782	.....	2,523	45,754	.....	− 955	27·5	− 7,028	13·3
Gypsum ..... "	342,915	738,593	0·42	336,332	881,984	0·47	− 6,583	1·9	+ 143,391	19·4
Magnesite ..... "	55,413	563,829	0·32	58,090	728,275	0·38	+ 2,677	4·8	+ 164,446	29·2
Magnesium sulphate ..... "	.....	.....	.....	929	4,645	.....	+ 929	.....	+ 4,645	.....
Manganese ..... "	957	39,544	.....	158	14,836	.....	− 799	83·5	− 74,708	83·4
Mica ..... "	(1,208)	255,239	0·14	1,166	358,851	0·19	− 42	3·5	+ 103,612	40·6

Mineral pigments—												
Barytes	Tons	1,368	19,393		3,490	54,027		+	2,122	155·1	+ 34,634	178·5
Oxides	"	8,811	58,711		9,409	87,605		+	598	6·8	+ 28,894	49·2
Mineral water			127,806			145,814					+ 18,008	14·1
Natural gas (*g*)	M. cu. ft.	25,467,458	3,958,029	2·23	27,408,940	5,045,298	2·66		+1,941,482	7·7	+1,087,269	27·5
Peat	Tons	300	1,500					−	300	100·0	− 1,500	100·0
Petroleum	Bls.	198,123	392,284	0·22	213,832	542,239	0·28	+	15,709	7·9	+ 149,955	38·2
Phosphate	Tons	203	2,514		149	1,486		−	54	26·6	− 1,028	40·9
Pyrites	"	309,251	1,084,095	0·61	416,649	1,610,762	0·85	+	107,398	34·7	+ 526,667	48·6
Quartz	"	136,745	251,226	0·14	216,288	496,182	0·26	+	79,543	58·2	+ 244,956	97·5
Salt	"	132,903	717,653	0·40	138,909	1,047,792	0·55	+	6,006	4·5	+ 330,139	46·0
Talc	"	13,104	49,423		15,803	76,539		+	2,699	20·6	+ 27,116	54·9
Tripolite	"	620	12,139		600	18,000		−	20	3·2	+ 5,861	48·3
Total			53,414,983	30 14		63,354,363	33·41				+9,939,380	18·6
Structural Materials and Clay Products.												
Cement, portland	Brls.	5,369,560	6,547,728	3·70	4,768,488	7,724,246	4·08	−	601,072	11·2	+ 1,176,518	18·0
Clay products—												
Brick, common	No.	237,034,675	1,826,844	1·03	210,630,576	1,999,465	1·06	−	26,404,099	11·1	+ 172,621	9·4
Brick pressed*	"	44,947,089	492,355	0 28	46,408,946	653,153	0 34	+	1,461,857	3·3	+ 160,798	32·7
Brick, paving	"	1,589,893	30,144					−	1,589,893	100·0	− 30,144	100·0
Brick, moulded and ornamental	"		21,102			54,234					+ 33,132	157·0
Fireclay, and fireclay products			234,562	0·13		326,511	0·17				+ 91,949	39·2
Fireproofing architectural terra-cotta			361,555	0·20		394,733	0·21				+ 33,178	9·2
Kaolin	Tons	1,750	17,500		533	9,594		−	1,217	69·5	− 7,906	45·2
Pottery			61,069			122,878					+ 61,809	101·2
Sewerpipe			716,287	0·40		783,762	0·41				+ 67,475	9·4
Tile, drain	No.		359,387	0·20		434,708	0·23				+ 75,321	21·0
Lime	Bus.	5,493,250	1,091,463	0·62	6,567,170	1,558,487	0 82	+	1,073,920	19·5	+ 467,024	42·8
Sand-lime brick	No.	16,540,747	126,235		18,001,990	201,355	0·11	+	1,461,243	8·8	+ 75,120	59·5
Sand and gravel		8,156,207	1,838,320	1·04	9,182,417	2,326,249	1·23	+	1,026,210	12·6	+ 487,929	26·5
Slate	Squares	1,262	6,223		1,422	7,789		+	160	12·7	+ 1,566	25·2

*Short tons throughout. (*a*) The metals, copper, lead, nickel, silver and zinc are for statistical and comparative purposes valued at the final average value of the refined metal. Pig-iron, zinc ore, and cobalt oxides are valued at the furnace or spot, and non-metallic products at the mine or point of shipment. (*b*) Copper content of smelter products and estimated recoveries from ores exported, at 27·180 cents per pound, in 1917, and 27·202 cents per pound in 916. (*c*) The total production of pig-iron in Canada in 1917, was 1,156,789 tons valued at $24,290.101, of which, it is estimated 1,110,767 tons valued at $23,521,318 should be credited to imported ores; in 1916 the total production was 1,169,257 tons valued at $16,750,898, of which 1,053,566 tons valued at $15,422,293 are credited to imported ores. (*d*) Refined lead and lead contained in base bullion exported at 11·137 cents per pound in 1917, and 8·513 cents in 1916, the average prices in Montreal. (*e*) Nickel content of matte produced and nickel recovered from silver-cobalt-nickel ores valued at 40 cents in 1917 and 35 cents in 1916. The value of the nickel contained in matte, as returned by the operators, was from 10 to 15 cents per pound for both years. (*f*) Silver recovered in bullion and recoverable from ores and smelter products exported at 81·417 cents per ounce in 1917, and at 65·661 cents in 1916. (*g*) Gross returns of sale of gas. (*k*) In 1917 and 1916 figures as reported by the producers, which differ from those of the Trade and Navigation reports.

Comparative Statement of Mineral Production for Years 1916 and 1917—*Concluded.*

Product.	1916.			1917.			Increase (+) or Decrease (-).		Increase (+) or Decrease (-).	
	Quantity.	Value (a).	Per Cent of Total.	Quantity	Value (a).	Per Cent of Total.	Quantity.	%	Value.	%
Structural Materials and Clay Products.—Con.		$			$				$	
Stone—										
Granite		1,247,267	0·70		639,412	0·34			− 607,855	48·7
Limestone		2,224,091	1·26		2,283,659	1·20			+ 59,568	2·7
Marble		118,810	0·07		55,820	0·03			− 62,990	53·0
Sandstone		146,244	0·08		261,256	0·14			+ 115,012	78·6
Total		17,467,186	9·86		19,837,311	10·46			+ 2,370,125	13·6
Grand total		177,201,534	100·00		189,646,821	100·00			+12,445,287	7·02

The total value of the metallic production in 1917 was $106,455,147 as against a value of $106,319,365 in 1916, and $75,814,841 in 1915. While the net change in 1917 was a small increase amounting to only one-tenth of one per cent it will be noted that decreases in the value of production of fine metals aggregating over $7,170,000 were offset by increases in seven metals aggregating over $7,300,000.

The total value of the production of non-metallic products in 1917 was $83,191,674, as against $70,882,169 in 1916; $61,294,330 in 1915 and $79,273,461 in 1914. Thus, while the value of non-metallic products in 1916 was less than the value in 1912 and 1913, that of 1917 was greater than any previous year. Much of this increase is to be credited to higher prices realized for most of these products though on the other hand important increases have been made in the quantities of certain war minerals produced including asbestos, chromite, graphite and pyrites.

The total value of the production in 1886 was $10,221,255, or about $2.23 per capita. In ten years the value had increased to $22,474,256, or $4.38 per capita, more than twice the total in 1886, and nearly twice the production per capita. The next ten years witnessed an increase to $79,286,697 in 1906, or $12.81 per capita, about 3½ times the production in 1896. From 1906 to 1917 the total production has shown an increase of over 139 per cent.

The record of annual mineral production in Canada since 1886 and the total annual production of metallic and non-metallic products since 1907 are shown in the following tables:—

Annual Mineral Production in Canada since 1886.

Year.	Value of production.	Value per capita.	Year.	Value of production.	Value per capita.
	$	$		$	$
1886	10,221,255	2.23	1902	63,231,836	11.36
1887	10,321,331	2.23	1903	61,740,513	10.83
1888	12,518,894	2.67	1904	60,082,771	10.27
1889	14,013,113	2.96	1905	69,078,999	11.49
1890	16,763,353	3.50	1906	79,286,697	12.81
1891	18,976,616	5.92	1907	86,865,202	13.75
1892	16,623,415	3.39	1908	85,557,101	13.16
1893	20,035,082	4.04	1909	91,831,441	13.70
1894	19,931,158	3.98	1910	106,823,623	14.93
1895	20,505,917	4.05	1911	103,220,994	14.42
1896	22,474,256	4.38	1912	135,048,296	18.27
1897	28,485,023	5.49	1913	145,634,812	18.77
1898	38,412,451	7.32	1914	128,863,075	15.96
1899	49,234,005	9.27	1915	137,109,171	
1900	64,420,877	12 04	1916	177,201,534	
1901	65,797,911	12.16	1917	189,646,821	

Annual Values of Metallic and Non-Metallic Production.

Year.	Metallic.	Non-Metallic.		Total.
		Fuels and other Non-Metallics.	Structural or clay and stone quarry products.	
	$	$	$	$
1907	42,426,607	31,275,546	12,863,049	(a) 86,865,202
1908	41,774,362	32,142,784	11,339,955	(a) 85,557,101
1909	44,166,841	31,141,251	16,533,349	91,831,441
1910	49,438,873	37,757,158	19,627,592	106,823,623
1911	46,105,423	34,405,960	22,709,611	103,220,994
1912	61,172,753	45,980,674	28,794,869	135,048,296
1913	66,361,351	48,463,709	30,809,752	145,634,812
1914	59,386,619	43,467,229	26,009,227	128,863,075
1915	75,814,841	43,373,571	17,920,759	137,109,171
1916	106,319,365	53,414,983	17,467,186	177,201,534
1917	106,455,147	63,354,363	19,837,311	189,646,821

(a) Total includes $300,000 allowed for products not reported.

The production of pig-iron given in the general table includes only that proportion of the output of Canadian blast furnaces credited to Canadian ores. There is an important production of pig-iron from imported ores (shown in the footnotes to the general table and in the chapter on iron and steel) and the total value thereof in 1917 was exceeded only by the production of coal, copper, and nickel. There is also a large production of aluminium from imported ores for which no value is included, in the general table of production.

Exports and Imports.

A very large portion of the mineral production of Canada is exported for consumption or refining outside of Canada. On the other hand considerable quantities of mine products, chiefly those which have been refined or subjected to partial treatment, or in the form of manufactured goods ready for consumption, are imported.

The total value of the exports of products of the mine including direct mine products and manufactures thereof in 1917 was $167,805,818 compared with $171,178,583 in 1916. This value includes for 1917 mine products to the value of $77,069,667 and manufactures valued at $90,736,151, as against mine products valued at $80,755,461 and manufactures valued at $90,423,122 in 1916.

Practically the whole of the Canadian production of copper, nickel, and silver is exported, also a very large proportion of the production of gold, asbestos, and mica. There are, as well, considerable exports of coal. These products alone contribute about 90 per cent of the value of the mine products exported. Manufactured products exported consist chiefly of iron and steel goods, agricultural implements, aluminium, calcium carbide, acetate of lime, fertilizers, and coke.

The United States is the chief destination of Canada's mine exports, about 77 per cent having been exported to that country during the fiscal year 1916-17 and about 20 per cent to the United Kingdom.

A great variety of mineral products, chiefly in the manufactured or semi-manufactured condition, are annually imported into Canada. These imports increased in value with great rapidity during the ten years preceding 1913. During the next two years, however, there was a falling off, but in 1916 the imports again increased to a value almost equal to that of 1913. The total value of these imports during the calendar year 1917 has greatly exceeded those of any previous year and amounted to $353,660,555, as compared with a value of $256,346,726 in 1916; $146,465,510 in 1915; $181,675,667 in 1914, and $259,299,745 in 1913.

It is perhaps significant that of the total value of these imports in 1917 over one-half was comprised in iron and steel goods and nearly 30 per cent in coal, coke, and petroleum.

Exports of Products of the Mine and Manufactures of Mine Products, Calendar Year, 1916 and 1917.

Products.		1916.		1917.	
		Quantity.	Value.	Quantity.	Value.
			$		$
Arsenic	Cwt.	39,505	197,458	45,724	507,898
Asbestos	Tons.	96,775	3,872,463	93,932	4,903,326
Asbestos sand and waste	"	33,564	241,272	52,068	430,966
Coal	"	2,135,359	7,099,387	1,733,186	7,387,192
Cobalt (nine months only)			712,880		1,542,945
Chromite (Chromic ore)	Tons.	12,633	152,534	19,229	342,528
Corundum	"	56	8,583	142	22,578
Feldspar, magnesite, talc, etc			329,215		410,007
Gold-bearing quartz, dust, nuggets, etc			18,382,903		15,929,051
Gypsum or plaster, crude	Tons.	221,156	252,476	224,423	245,182
Metals, viz:—					
Copper, fine, contained in ore, matte, regulus, etc	Cwt.	1,249,424	20,776,536	865,569	14,183,264
Lead, metallic, contained in ore, etc.	"	90,484	558,180	134,104	925,056
Molybdenite	"			647	81,173
Nickel, fine, contained in ore, matte, or speiss	"	804,417	8,662,179	812,724	8,708,650
Platinum, contained in concentrates or other forms	Ozs.	532	41,945	136	11,309
Silver, metallic, contained in ore concentrates, etc	"	25,279,359	15,637,885	21,718,784	17,621,398
Mica	Lbs.	1,308,793	379,720	1,271,460	451,345
Mineral pigments, iron oxides, ochres	Cwt.	33,917	25,312	29,022	30,052
Mineral water, natural, not in bottles.	Gals.	229	22	75	20
Mineral wax	Cwt.	80,987	201,653	72,337	401,331
Oil:—					
Mineral, coal and kerosene, crude	Gals.	137,647	11,439	2,130	183
Mineral, coal and kerosene, refined	"	446,595	48,137	28,212	6,558
Gasoline and naphtha	"	54,806	14,194	24,304	7,419
Ores:—					
Antimony	Tons.	794	48,158	774	50,476
Iron	"	161,260	541,779	164,004	660,673
Manganese	"	957	89,544	185	16,031
Other	"	69,331	1,348,540	60,863	683,380
Phosphates	"	103	1,543	14	200
Plumbago, crude ore and concentrates.	Cwt.	6,223	13,114	2,232	7,455
Pyrites	Tons.	156,722	557,024	279,646	974,200
Salt	Cwt.	3,059	2,223	172,850	94,364
Sand and gravel	Tons.	1,114,913	388,309	1,075,374	290,964
Stone, ornamental, granite, marble, etc., unwrought	"	15,967	7,989	330	359
Stone, building, freestone, limestone etc., unwrought	"	128,453	103,796	139,153	122,430
Stone, crushed	"	26,754	27,611	2,308	2,277
Stone, for manufacture of grindstones, rough	"	356	1,764	310	2,062
Other articles of the mine			17,694		15,375
Total mine products			80,755,461		77,069,667
MANUFACTURES.					
Abrasives, artificial (9 months)					1,249,513
Agricultural implements and machines, viz:					
Mowing machines	No.	6,672	233,024	149	486,593
Cultivators	"	4,219	142,028	5,336	170,611
Reapers	"	1,115	65,011	2,771	188,897
Drills	"	4,713	317,831	6,240	314,435
Harvesters and binders	"	7,495	814,517	9,595	1,158,757
Ploughs	"	17,760	483,650	25,352	1,150,386
Harrows	"	6,691	214	4,093	93,609
Hay rakes	"	2,011	746	4,704	116,395
Seeders	"	2	128	26	2,621
Threshing machines	"	1,522	465,209	1,172	274,764
All others			292,603		297,640
Parts			750,966		1,025,275

Exports of Products of the Mine and Manufactures of Mine Products, Calendar Year, 1916 and 1917—*Concluded.*

Products.	1916.		1917.	
	Quantity.	Value.	Quantity.	Value.
MANUFACTURES.—*Con.*		$		$
Asbestos, manufactures of		4,741		55,666
Bricks M.	1,746	13,942	4,464	40,039
Cement		2,424		16,857
Clay, manufactures of		58,550		83,600
Coke Tons.	48,539	221,334	23,596	137,318
Cream separators		34,567		150,923
Drugs, chemicals and medicines, viz:—				
Acetate of lime Cwt.	73,589	215,397	67,607	246,042
Acid sulphuric "	31,517	74,527	189,551	197,888
Ammonium sulphate (9 months) "			160,947	693,377
Calcium carbide "	1,469,663	4,369,065	1,629,827	4,027,894
Cyanide (9 mos.) "			749,955	1,837,959
Phosphorus Lbs.	834,950	122,323	1,121,835	185,767
Earthenware and manufactures of		7,620		14,504
Fertilizers		3,338,413		1,253,667
Gasoline engines No.	529	86,310	800	152,275
Grindstones, manufactured		43,178		29,242
Gypsum or plaster, ground		154,630		146,384
Iron and steel and manufactures of, viz:				
Stoves of all kinds		29,956		50,451
Gas buoys and parts of		2,484		85
Castings, n.o.p.		167,881		593,297
Ferro-silicon and ferro compounds Tons.	22,802	1,352,013	33,212	2,616,924
Pig-iron "	23,304	374,388	12,081	423,814
Linotype machines and parts of		35,465		6,977
Machinery, n.o.p.		1,206,863		2,499,581
Sewing machines, and parts of No.		82,032		157,809
Washing machines, domestic and wringers		5,763		6,400
Typewriters No.	3,597	246,761	1,883	97,904
Scrap iron or steel Cwt.	2,285,991	1,357,018	3,531,826	2,300,022
Bars and rods (9 mos.) Tons.			41,321	3,632787
Billets, blooms, ingots (9 mos.) "			41,558	1,831,917
Rails (9 mos.) "			26,402	1,605,742
Hardware, viz:—				
Wire and wire nails Cwt.	2,450,517	8,597,320	2,109,637	9,823,760
Tools, hand or machine		376,549		940,347
Hardware, n.o.p.		515,613		917,177
All other, n.o.p.		38,974,154		7,000,678
Lime		66,406		74,523
Metals:—				
Aluminium in bars, blocks, etc. Cwt.	184,253	5,201,066	223,246	7,620,953
Aluminium, manufactures of		26,780		17,165
Brass, old and scrap Cwt.	375,037	6,064,779	595,000	9,615,627
Copper in pigs, bars, sheets, etc. "	24,304	581,268	175,706	4,776,025
Copper, old and scrap "	58,466	1,284,895	159,939	4,296,989
Lead in pigs, etc. "	1,121	7,710	10,045	62,453
Metallic shingles and laths and corrugated roofing		30,563		41,084
Plated ware, n.o.p.		15,050		23,164
Platinum, old and scrap (9 mos.) Ozs.			195	18,290
N.o.p.		3,143,135		5,611,556
Mineral and aerated waters in bottles		1,576		10,745
Oil, n.o.p. Gals.	3,391,857	1,038,025	4,264,160	1,041,467
Plumbago, manufactures of		304,919		384,505
Stone of all kinds, dressed		4,592		1,816
Tar		50,352		43,547
Tin, manufactures of		16,284		68,844
Vehicles:—				
Automobiles No.	12,579	6,078,668	9,492	4,561,875
" parts of		672,060		2,035,769
Bicycles No.	580	50,894	454	61,984
" parts of		5,877		52,260
Total Manufactures		90,423,122		90,736,151
Grand Total		171,178,583		167,895,818

EXPORTS.

Showing Destination of Mine Products during the Fiscal Years, 1914-15, 1915-16, and 1916-17.

Destination.	1914-15. Value.	1915-16. Value.	1916-17. Value.
British Empire.	$	$	$
United Kingdom	12,219,937	12,425,248	15,545,227
Australia	125,903	122,409	53,297
Bermuda	.....	5	210
British South Africa	8,092	43,397	27,151
" Guiana	.....	28,812	109,590
" India	612	.....	119,569
" E. Indies, other	4,104	.....	37,567
" W. Indies	1,552	9,170	60
Gibraltar	1,974	3,301	55,828
Hong Kong	213,254	498,991	263,812
Newfoundland	516,756	806,726	919,300
New Zealand	130	695	12,639
Total British Empire	13,092,614	13,943,754	17,144,240
Other Countries.			
Alaska	.....	.....	.....
Argentina	243,231	295,169	347,124
Austria Hungary	3,447	102	132
Belgium	37,124	.....	.....
Brazil	45,668	.....	.....
Chili	3,159	.....	135
China	.....	.....	6,991
Cuba	94,203	368,199	135,483
Denmark	1,461	7,304	5,194
Egypt	611	.....	7,646
France	.....	.....	3,312
French W. Indies	91,857	186,868	555,589
Germany	.....	.....	900
Greece	290,276	.....	.....
Greenland, Iceland, etc	.....	914	4,644
Hawaii	.....	4,957	.....
Holland	26,262	1,804	.....
Italy	87,207	5,130	17,923
Japan	41,353	154,783	212,938
Mexico	69,483	61,016	146,440
Miquelon and St. Pierre	1,928	9,393	.....
Norway	36,519	40,919	22,107
Panama	2,662	.....	.....
Peru	3,891	.....	.....
Philippines	.....	237	.....
Porto Rico	5,257	.....	.....
Portugal	.....	2,016	.....
Russia	633	.....	.....
San Domingo	2,678	62,687	24,885
Spain	.....	.....	6,456
Sweden	911	9,900	.....
United States	345	9,001	.....
	37,558,209	51,425,708	66,974,768
Total other countries	38,648,375	52,646,107	68,472,667
Grand total	51,740,989	66,589,861	85,616,907

IMPORTS.

Imports of Products of the Mine and Manufactures of Mine Products—Calendar Years 1915, 1916, and 1917.

Products	1915. Value.	1916. Value.	1917. Value.
	$	$	$
Alumina	892,634	1,114,061	1,866,240
Alum, alum cake and chloralum	196,685	471,836	423,908
Aluminium and manufactures	722,235	671,095	560,481
Ammonia, nitrate of		202,153	283,854
Ammonia, sulphate of	14,637	9,672	26,062
Antimony regulus	344,918	208,450	61,732
Antimony salts	10,320	13,891	6,296
Arsenic, oxide and sulphide of	6,072	18,925	54,136
Asbestos	168,894	334,670	537,431
Asphaltum	570,295	563,446	454,405
Bells and gongs	43,205	72,420	84,021
Bismuth	9,004	8,606	12,922
Blanc fixe and satin white	59,471	86,306	90,482
Blast furnace slag	14,067	4,602	7,106
Borax	164,180	265,933	381,294
Brick and tile	488,288	390,407	442,455
Brick, fire, of a kind not made in Canada, and n.o.p	813,071	1,667,792	3,156,591
Bromine and bromides	530	413	530
Burrstones	314	648	910
Cement, portland, and manufactures	47,836	43,747	28,366
Chalk, Cornwall stone, feldspar, fluorspar, magnesite, mica, schist	100,012	170,498	264,220
Clays: china, fire, pipe and all other	237,096	325,494	416,209
Coal: anthracite, bituminous, slack and run-of-mine	28,345,605	38,259,666	70,562,357
Coke	1,608,464	2,220,078	6,517,260
Coke, ground for electric batteries	12,266	8,119	15,239
Copper and manufactures of	3,957,770	7,566,080	10,015,561
Cryolite	61,312	78,916	101,141
Crucibles, clay or plumbago	106,761	520,341	798,044
Chloride of lime	112,142	158,546	100,834
Cyanides of potassium, sodium, cyanogen, or cpd. of bromine	367,329	507,021	505,294
Diamonds, unset, and bort	709,154	1,332,957	1,538,887
Earthenware	1,460,010	2,180,414	2,595,582
Earths, crude	1,811	4,074	3,917
Electric carbons	40,685	58,676	65,225
Emery	206,732	367,719	632,836
Fertilizers, compound or manufactured	734,952	639,884	1,045,140
Flint, quartz, silex, etc	54,493	90,280	77,104
Foundry facings	9,855	27,638	47,416
Fullers earth	12,321	13,072	17,004
Fossils	4,000	2,699	6,943
Gannister	2,462	2,833	23,954
Gold and silver and manufactures of	1,829,953	20,016,288	2,921,018
Graphite and manufactures of	45,117	103,150	171,209
Grindstones	79,391	122,291	185,607
Gypsum and plaster of Paris	25,819	43,291	35,460
Hydrofluosilicic acid	36,085	28,611	97
Iron and steel—Total, 1915, 74,308,983 1916, 129,040,248 1917, *186,538,538			
Pig-iron	624,200	1,145,150	2,764,165
Ferro products and chrome steel	820,976	1,898,879	2,045,595
Ingots, blooms, billets, puddled bars, etc	1,270,687	895,446	1,401,782
Scrap iron and scrap steel	127,614	179,751	454,079
Plates and sheets	7,647,560	12,806,856	17,582,700
Tin plates and sheets	2,893,951	5,221,163	9,985,631
Bars, rods, hoops, bands, etc	5,829,088	13,362,807	22,567,187
Structural iron and steel	3,615,333	8,042,127	15,282,012
Rails and connexions	379,218	470,023	944,595
Pipes and fittings	110,978	165,576	143,124
Nails and spikes	86,876	283,007	892,021
Wire	2,175,834	4,305,674	4,409,376
Forging castings and manufactures	1,932,370	3,343,559	5,976,313
Other iron and steel products	46,804,298	76,975,990	102,989,958
Iron ore	2,331,755	4,419,013	5,124,889

IMPORTS.

Imports of Products of the Mine and Manufactures of Mine Products—Calendar Years 1915, 1916, and 1917—*Continued*.

Products.	1915. Value.	1916. Value.	1917. Value
	$	$	$
Iron sand	3,203	15,641	36,737
Kainite	146	5,016	38,528
Lead and manufactures; litharge	2,482,916	2,077,896	1,732,428
Lime	98,040	96,332	78,251
Lithographic stone	1,316	2,768	3,921
Manganese, oxide of	46,678	63,786	92,676
Magnesia	9,895	20,681	16,186
Meerschaum	73	....	....
Mercury or quicksilver	159,284	74,461	76,332
Metallic alloys:—			
Babbitt metal	16,703	20,524	26,444
Brass and manufactures of	3,177,942	4,676,374	5,328,650
Britannia metal and manufactures	11,198	25,192	20,513
German silver, nickel, and nickel silver	274,706	414,410	519,064
Type metal	1,838	2,126	1,193
Mineral and bituminous substances	123,726	344,743	647,444
Mineral water, including aerated water	126,569	130,933	108,444
Nickel anodes	9,571	6,019	8,348
Ochres, etc	284,749	409,258	417,502
Ores of metals, n.o.p.	962,999	2,844,277	3,221,267
Paraffin wax	40,965	70,308	140,722
Paraffin candles	27,552	30,539	75,257
Petroleum and products of	7,979,264	14,604,476	22,741,709
Phosphate (fertilizer)	14,148	16,182	62,543
Platinum and manufactures of	84,087	88,543	114,279
Potash and manufactures of	206,575	150,736	135,836
Precious stones	132,173	207,621	192,748
Pumice	18,814	34,554	34,162
Salt	517,526	694,835	1,084,205
Saltpetre	279,602	101,103	163,556
Sand and gravel	120,756	183,894	312,403
Slate and manufactures of	108,676	96,776	106,893
Sand paper	133,677	247,317	331,776
Soda products: barilla, bichromate, caustic, salt, and salt cake	858,364	2,079,859	3,096,578
Stone and manufactures of (including marble)	539,173	587,304	764,658
Soda, nitrate of	1,050,648	2,973,473	1,935,698
Sulphate of iron (copperas)	5,302	11,549	9,952
Sulphur and phosphorus	509,889	1,229,356	1,549,828
Sulphuric acid	4,872	115,173	15,680
Talc	1,866	(a)	(a)
Tar, coal and pine	151,377	184,286	208,065
Tin and manufactures of (including tinware)	1,634,796	2,999,675	5,656,665
Whiting and prepared chalk	109,551	181,349	261,812
Zinc and manufactures of	2,775,358	3,690,577	3,641,272
	146,465,510	256,346,726	353,660,555

(a) Not separately recorded.

Production by Provinces.

A summary of the mineral production by provinces in 1916 and 1917 is shown in the accompanying tables in the first of which the total production in the several provinces and the percentages of each are given for the past three years.

In comparing the relative productions of the various provinces it should be remembered that Nova Scotia is not credited with the large production of pig-iron and steel at Sydney and Sydney Mines, which is made almost entirely from imported iron ores and is not naturally credited as Canadian mine product. Similarly a large proportion of the pig-iron production in Ontario is excluded from the total value, because

it is derived from imported ores. The Province of Quebec, also, is not credited with the production of aluminium at Shawinigan Falls, which is made from imported bauxite.

Mineral Production by Provinces, 1915, 1916, and 1917.

Province.	1915.		1916.		1917.	
	Value of production.	Per cent of total.	Value of production.	Per cent of total.	Value of production.	Per cent of total.
	$		$		$	
*Nova Scotia	18,088,342	13·19	20,042,262	11·31	21,104,542	11·13
New Brunswick	903,467	0·66	1,118,187	0·63	1,435,024	0·76
Quebec	11,619,275	8·48	14,406,588	8·13	17,400,077	9·18
Ontario	61,077,287	44·54	80,461,323	45·41	89,066,800	46·98
Manitoba	1,318,	0·96	1,823,576	1·03	2,628,264	1·39
Saskatchewan	451,	0·33	560,473	0·33	860,651	0·45
Alberta	9,899,347	7·23	13,207,643	7·50	16,527,535	8·71
British Columbia	28,689,425	20·92	39,989,962	22·56	36,141,926	19·06
Yukon	5,057,708	3·69	5,491,610	3·10	4,482,202	2·36
Dominion	137,109,171	100·00	177,201,534	100·00	189,646,821	100·00

*Includes a small production of lime from Prince Edward Island in 1916.

Mineral Production of Nova Scotia, 1916 and 1917.

Product.	1916.		1917.	
	Quantity.	Value.	Quantity.	Value.
		$		$
Gold ..... Ozs.	4,562	94,305	2,210	45,685
Barytes ..... Tons	1,368	19,393	3,490	54,027
Coal ..... "	6,912,140	18,514,662	6,327,091	19,410,737
Grindstones ..... "	273	5,800	375	9,875
Gypsum ..... "	238,212	278,160	215,472	301,261
Manganese ..... "	646	70,371	158	14,936
Molybdenite ..... Lbs.	.....	.....	94	94
Tripolite ..... Tons	620	12,150	600	18,000
Clay products	.....	238,470	.....	331,542
Lime ..... Bus.	911,534	182,306	986,106	197,344
Stone	.....	459,298	.....	569,521
Other products	.....	167,158	.....	181,620
Total	.....	20,042,262	.....	21,104,542

The total production of pig-iron in Nova Scotia in 1917 was 472,147 tons valued at $10,387,234, and in 1916, 470,055 tons valued at $7,050,825.

Mineral Production of New Brunswick, 1916 and 1917.

Product.	1916.		1917.	
	Quantity.	Value.	Quantity.	Value.
		$		$
Silver ..... Ozs.	.....	.....	400	326
Copper ..... Lbs.	.....	.....	33,920	9,219
Coal ..... Tons	143,540	386,016	189,095	708,010
Grindstones ..... "	3,205	46,982	2,148	35,879
Gypsum ..... "	39,546	153,064	38,556	191,631
Manganese ore ..... "	(a)	.....	.....	.....
Natural gas ..... M. cu. ft.	610,118	79,628	796,775	103,735
Petroleum ..... Bls.	1,345	2,663	2,341	5,460
Clay products	.....	42,881	.....	51,304
Lime ..... Bus.	424,113	104,635	532,251	171,248
Stone	.....	112,257	.....	111,150
Other products	.....	190,061	.....	47,062
Total	.....	1,118,187	.....	1,435,024

(a) Included in "Other products."

Mineral Production of Quebec, 1916 and 1917.

Product.		1916		1917	
		Quantity.	Value.	Quantity.	Value.
			$		$
Molybdenite	Lb.	.....	.....	216,693	216,693
Copper		5,703,347	1,551,424	5,015,560	1,363,229
Gold	Ozs.	1,034	21,375	1,511	31,235
Iron ore, sold for export	Tons	3,[illegible]	8,308	16,488	48,569
Lead	Lbs.	698,760	59,485	1,378,001	153,468
Silver	Ozs.	98,610	64,748	136,194	110,885
Zinc ore	Lbs.	1,663,200	212,956	1,786,740	159,698
Asbestos and asbestic	Tons.	154,149	5,228,869	153,771	7,538,233
Chromite	"	27,517	311,499	36,726	499,682
Feldspar	"	4,619	18,075	1,188	8,304
Graphite (a)	"	479	75,776	541	106,305
Magnesite	"	54,778	554,304	58,000	728,275
Mica	"		192,343	.....	286,730
Mineral water	Gall.	93,782	16,223	.....	9,201
Iron oxides	Tons.	8,811	58,711	9,469	87,606
Phosphate	"	190	2,340	127	1,220
Pyrites	"	[illegible]639	523,272	122,862	501,351
Quartz	"	149	1,430	550	1,788
Cement	Bbls.	2,1[illegible]475	2,525,863	2,079,625	3,274,989
Clay products			976,164	.....	973,716
Kaolin	Tons	700	17,500	533	9,594
Lime	"	1,49[illegible]845	267,119	1,470,486	535,012
Slate	Squs.	[illegible]992	6,223	1,422	7,789
Stone			1,370,465	.....	991,503
Other products			342,189	.....	265,633
Total			14,406,598	.....	17,400,097

There was also in this Province an import production of [illegible] from imported ores.

Mineral Production of Ontario, 1916 and 1917.

Product.		1916.		1917.	
		Quantity.	Value.	Quantity.	Value.
			$		$
Asbestos	Tons	.....	.....	10	2,150
Cobalt, metallic and in oxide, etc.	Lbs.	840,536	994,500	1,079,572	1,727,315
Copper	"	44,907,035	12,240,094	42,867,774	11,651,461
Gold	Ozs.	492,481	10,180,485	423,261	8,749,581
Iron ore, sold for export	Tons	137,399	385,381	162,764	542,097
Iron, pig, from Canadian ore (a)	"	115,691	1,328,606	46,022	758,763
Lead	Lbs.	685,923	58,398	1,586,711	176,712
Molybdenite	"	(b)	.....	68,213	68,213
Nickel	"	83,968,564	20,035,498	84,330,280	33,732,112
Silver	Ozs.	21,608,158	14,188,133	19,201,835	15,714,975
Actinolite	Tons	200	2,750	120	1,320
Arsenious oxide	"	2,186	262,349	2,666	666,231
Corundum	"	67	10,307	188	32,153
Feldspar	"	14,878	58,332	18,274	81,933
Fluorspar	"	1,284	10,236	4,249	68,756
Graphite	"	3,476	249,586	3,173	296,587
Gypsum	"	30,668	116,086	48,947	130,138
Mica	"	.....	62,896	.....	72,121
Mineral water	.....	.....	110,333	.....	126,231
Natural gas	M. cu. ft	17,059,109	2,765,105	19,865,036	3,641,587
Peat	Tons	300	1,500	.....	.....
Petroleum	Bls.	196,778	389,621	209,991	473,477
Phosphate	Tons	13	174	20	256
Pyrites	"	177,552	555,523	288,058	1,080,866
Quarts	"	94,519	167,636	177,983	362,251
Salt	"	132,903	717,653	138,909	1,047,792
Talc	"	13,051	48,576	15,778	76,139
Cement	Bls.	2,230,386	2,312,677	1,676,904	2,267,610
Clay products	.....	.....	2,145,036	.....	2,575,304
Lime	Bus.	2,031,396	367,115	2,846,850	668,368
Sand-lime brick	No.	11,638,150	77,726	10,667,600	100,885
Stone	.....	.....	857,023	.....	992,455
Other products	.....	.....	836,903	.....	1,170,062
Total	.....	.....	80,461,323	.....	89,066,600

(a) The total production of pig-iron in Ontario in 1917 was 698,353 tons, valued at $14,638,726; in 1916 699,202 tons, valued at $9,700,073.
(b) Included under "Other products."

Mineral Production of Manitoba, 1916 and 1917.

Product.		1916.		1917.	
		Quantity.	Value.	Quantity.	Value.
			$		$
Copper	Lbs.	.....	.....	1,116,000	303,329
Gold	Ozs.	.....	.....	440	9,095
Silver	"	.....	.....	7,201	5,863
Calcined gypsum	Tons	28,489	191,283	33,347	258,934
Clay products	.....	.....	104,248	.....	114,651
Lime	Bus.	355,301	83,754	393,982	92,932
Cement	Bls.	427,293	794,897	544,949	1,175,669
Sand-lime brick	No.	3,215,097	33,048	5,070,500	76,742
Stone	.....	.....	372,894	.....	301,968
Other products	.....	.....	243,452	.....	280,061
Total	.....	.....	1,823,576	.....	2,628,294

Mineral Production of Saskatchewan, 1916 and 1917.

Product.		1916.		1917.	
		Quantity.	Value.	Quantity.	Value
			$		$
Coal	Tons	281,300	441,836	355,445	662,451
Clay products			78,668		78,251
Sand-lime brick	No.	990,000	9,890	674,500	7,674
Other products			60,079		112,275
Total			590,473		860,651

Mineral Production of Alberta, 1916 and 1917.

Product.		1916.		1917.	
		Quantity.	Value.	Quantity.	Value.
			$		$
Gold	Ozs.	82	1,695		
Coal	Tons.	4,559,054	11,386,577	4,736,350	14,153,685
Natural gas	M. cu. ft.	6,904,231	1,113,296	6,744,130	1,299,976
Petroleum	Bls.			8,500	63,302
Cement	"	275,727	477,832	259,423	567,969
Clay products			225,140		309,991
Lime	Bus.	78,019	20,033	104,540	35,516
Sand-lime brick	No.	697,500	5,571	1,547,590	15,703
Stone			257		7,482
Other products (a)			67,142		73,911
Total			13,297,543		16,527,535

(a) Includes in 1917 a small value in copper, zinc and silver, in addition to sand and gravel.

Mineral Production of British Columbia, 1916 and 1917.

Product.		1916.		1917.	
		Quantity.	Value.	Quantity.	Value.
			$		$
Antimony and Molybdenite	Lbs.	.....	13,003	3,705	3,705
Copper (a)	"	63,642,550	17,312,046	57,730,959	15,691,275
Gold	Ozs.	219,633	4,540,216	133,742	2,764,693
Lead	Lbs.	39,157,701	3,333,496	29,483,725	3,283,602
Platinum	Ozs.	15	600	57	3,823
Silver	"	3,392,872	2,227,794	2,655,964	2,162,430
Zinc ore	Lbs.	21,701,560	2,778,667	27,861,441	2,479,947
Ar-enic	Tons.	.....	.....	280	11,200
Coal	"	2,584,061	8,075,190	2,433,888	8,235,716
Gypsum	"	.....	.....	10	20
Magnesite	"	635	9,525	.....	.....
Magnesium sulphate	"	.....	.....	929	4,645
Mineral water	.....	.....	1,250	.....	1,382
Pyrites	Tons.	1,060	5,300	5,709	28,545
Quartz	"	41,077	82,154	37,755	132,143
Talc	"	53	848	25	400
Cement	Bls.	285,679	436,459	207,597	438,009
Clay products	.....	.....	292,698	.....	334,685
Lime	Bus.	194,042	66,301	232,955	58,067
Stone	.....	.....	564,218	.....	205,978
Other products	.....	.....	230,197	.....	241,661
Total	.....	.....	39,969,962	.....	36,141,926

(a) Smelter recoveries of copper.

Mineral Production of Yukon, 1916 and 1917.

Product.		1916.		1917.	
		Quantity.	Value.	Quantity.	Value.
			$		$
Antimony ore	Tons.	20	160	.....	.....
Copper	Lbs.	2,807,096	763,586	2,460,079	668,650
Gold	Ozs.	212,760	4,396,900	177,667	3,672,703
Lead	Lbs.	955,222	81,318	127,844	14,238
Silver	Ozs.	360,101	236,446	119,605	97,379
Coal	Tons.	3,300	13,200	4,872	29,232
Total	.....	.....	5,491,610	.....	4,482,202

Mineral Production by Provinces, 1899-1917.

Calendar Year.	Nova Scotia*.	New Brunswick.	Quebec.	Ontario.	Manitoba.	Alberta.	Saskatchewan.	Yukon.	British Columbia.	Total.
1899	$ 6,817,274	$ 420,227	$ 2,585,635	$ 9,819,557					$ 12,482,605	$ 49,234,005
1900	9,298,479	439,060	3,292,383	11,258,099			$ 17,108,707		16,680,526	64,420,877
1901	7,770,159	467,985	3,759,984	13,970,010			23,452,330		20,531,833	65,797,911
1902	10,686,549	607,129	3,743,636	14,619,091			19,297,940		17,449,031	63,231,836
1903	11,431,914	580,495	3,585,938	14,160,033			16,127,400		17,899,147	61,740,513
1904	11,212,746	559,913	3,688,482	12,582,843			14,082,986		19,325,174	60,082,771
1905	11,507,047	559,037	4,405,975	18,833,292			12,713,613		22,386,008	69,078,999
1906	12,894,305	646,328	5,242,058	25,111,682			11,387,642		25,299,600	79,286,697
							10,092,726			
1907	14,522,040	664,467	6,205,553	30,381,638	$ 898,775	$ 4,657,524	$ 533,251	$ 3,335,898	25,656,056	86,865,202
1908	14,487,108	579,816	6,372,949	30,623,812	584,374	5,122,505	413,212	3,669,290	23,704,035	85,557,101
1909	12,504,810	657,035	7,086,265	37,374,577	1,193,377	6,047,447	456,246	4,032,678	22,479,006	91,831,441
1910	14,195,730	581,942	8,270,136	43,538,078	1,500,359	8,996,210	498,122	4,764,474	24,478,572	106,823,623
1911	15,409,397	612,830	9,304,717	42,796,162	1,791,772	6,662,673	636,706	4,707,432	21,299,305	103,220,994
1912	18,922,236	771,004	11,656,988	51,985,876	2,463,074	12,073,589	1,165,642	5,933,242	30,076,635	135,048,290
1913	19,376,183	1,102,613	13,475,534	59,167,749	2,214,496	15,054,046	881,142	6,276,737	28,086,312	145,634,812
1914	17,584,639	1,014,570	11,836,929	53,034,677	2,413,489	12,684,234	712,313	5,418,185	24,164,039	128,863,075
1915	18,089 342	903,467	11,619,275	61,071,287	1,318,387	9,909,347	451,933	5,057,708	28,689,425	137,109.171
1916	20,042,262	1,118,187	14,406,598	80,461,323	1,823,576	13,297,543	590,473	5,491,610	39,969,962	177,201,534
1917	21,104,342	1,435,024	17,400,077	89,066,600	2,628,264	16,527,535	860,651	4,482,202	36,141,926	189,646,821

* Includes a small production from Prince Edward Island.

Mine Production.

The statistics of mineral production presented in the preceding tables are based as already explained in so far as metalliferous ores are concerned on the actual or probable recovery of refined metals from the ores treated. An endeavour has been made to compile another series of records eliminating as far as possible the metallurgical operations and to include only the actual quantities of ores, or concentrates shipped from mines and the net value of same. It has not been found feasible, however, to eliminate entirely the metallurgical operations in certain cases such as the recovery of bullion in placer operations, the recovery of gold bullion from milling ores and of silver bullion by those plants carrying on milling operations as well as mining, there being no commercial basis on which a separation of values could be made.

A record of mine production compiled on this basis is shown in the following tables and includes a record of the tonnage and value of ores, or minerals mined, treated and shipped, the quantities of metals contained in ores shipped and records of labour employed and wages paid. It should be noted that these records cover only active shipping mines and do not include any record of the labour employed in the smelting and refining of ores, nor in blast furnace operations, with the exceptions noted. Previous to 1917 no record was obtained of the labour employed in connexion with the production of petroleum, and similar returns in respect to placer mining were not sufficiently complete to be included in the tables. The values of the ores given are in general those furnished by the operators. In certain cases, however, where such values have not been furnished estimates have been made.

The tables showing the quantities of metals contained in the ores shipped give the total quantities of metals contained without any deductions, or allowances being made for smelter, or treatment losses.

Mine Production, 1914.

	No. of mines or works	Men employed.		Wages paid.	Ores or minerals mined.	Metals, ores, concentrates or minerals shipped.	Net value of shipments.
		Underground.	Surface.				
METALLIFEROUS ORES.	No.	No.		$	Tons.	Tons.	$
Iron ores	5	598		364,480	345,410	244,854	542,041
Milling gold ore—							
Bullion shipped						13	6,101,463
Concentrates	44	1,070	1,206	2,603,414	754,732	6,974	860,379
Silver-cobalt ores—							
Mine bullion shipped						354	5,665,006
Ore and concentrate	29	1,412	1,883	3,207,116	733,174	16,917	7,827,140
Nickel-copper ores	9	736	1,286	1,693,997	1,000,364	979,908	5,020,003
Copper ores	4	113	180	177,721	119,295	117,762	502,637
Silver-lead and zinc ores	76	394	817	1,110,876	186,646	70,207	2,652,802
Zinc products						10,893	262,563
Gold-copper-silver ores	20	823	1,746	2,512,241	1,857,788	1,647,973	9,580,537
Placer mining—							
Yukon						10	5,182,616
British Columbia						1	565,000
Alberta							992
Total metalliferous	187	11,994		11,669,854	4,997,406	3,115,855	44,763,179
Total non-metalliferous	451	33,732		22,058,526	17,078,300	14,708,307	43,467,229
Total structural materials	1,023	21,129		9,881,316			26,009,227
	1,661	66,855		43,609,696			114,239,635

Mine Production 1914—Content of Shipments.

—	Gold.	Silver.	Nickel.	Copper.	Lead.	Zinc.
	Ozs.	Ozs.	Lbs.	Lbs.	Lbs.	Lbs.
Milling gold ore—						
Bullion	289,860	85,110				
Concentrates	38,717	64,218		90	15,141	
Silver-cobalt ores—						
Mine bullion shipped		10,336,527				
Ore and concentrate		15,523,608				
Nickel copper ores			60,800,799	36,300,532		
Copper ores	1,050	51,440		6,450,899		
Silver-lead, zinc-ores	334	2,501,820			50,527,130	
Zinc products		376,420				9,101,460
Gold-copper-silver ores	182,784	761,890		53,771,126		
Placer mining—						
Yukon	247,753	55,744				
British Columbia	27,332					
Alberta	48					
Total	787,887	29,755,777	60,800,799	96,522,647	50,542,271	9,101,460

Mine Production, 1915.

—	No. of mines or works.	Men employed.		Wages paid.	Ores or minerals mined.	Metals, ores, concentrates or minerals shipped.	Net value of shipments.
		Underground.	Surface.				
METALLIFEROUS ORES.	No.	No.		$	Tons.	Tons.	$
Antimony ore	7	157		55,038	15,318	1,491	83,971
Molybdenite	4	52		16,980		37	28,450
Iron ores	5	399		230,346	251,742	398,112	774,427
Milling gold ore—							
Bullion shipped						18	8,953,130
Concentrates	50	1,324	1,555	2,893,187	1,190,477	8,335	711,947
Silver-cobalt ores—							
Mine bullion shipped						232	3,410,936
Ore and concentrate	25	1,008	1,531	2,363,414	588,404	61,362	8,326,776
Nickel-copper ores	9	857	1,745	2,202,536	1,364,048	1,372,724	10,552,673
Copper ores	6	173	205	215,065	141,758	142,121	1,026,562
Silver-lead and zinc ores	66	328	784	960,8[illegible]	215,694	73,752	2,958,394
Zinc products						14,895	540,022
Gold-copper-silver ores	53	886	1,694	2,868,449	2,380,709	2,186,646	10,947,059
Placer mining—							
Yukon						9	4,776,145
British Columbia							770,000
Alberta							4,026
Total metalliferous	205	12,698		11,805,919	6,138,150	4,259,734	53,864,518
Total non-metalliferous	472	30,392		20,257,126	16,594,889	14,481,882	43,373,571
Total structural materials	943	13,786		5,657,717			17,920,759
	1,618	56,876		37,720,762			115,158,848

Mine Production, 1915—Content of Shipments.

—	Gold.	Silver.	Nickel.	Copper.	Lead.	Zinc.	Antimony
	Ozs.	Ozs.	Tons.	Tons.	Tons.	Tons.	Tons.
Antimony ore							540
Milling gold ore—							
Bullion	430,981	87,116					
Concentrates	35,779	37,507					
Silver-cobalt ores—							
Mine bullion shipped		6,752,183					
Ore and concentrate		17,603,943					
Nickel-copper ores			43,891	23,318			
Copper ore	1,151	64,965		3,538			
Silver-lead-zinc ores	459	2,637,444			24,354		
Zinc products		316,731				6,116	
Gold-copper-silver ores	292,127	849,784		34,758			
Placer mining—							
Yukon	229,803	25,689					
British Columbia	37,249						
Alberta	195						
Total	937,744	28,375,362	43,891	61,614	24,354	6,116	540

Mine Production, 1916.

—	No. of mines or works.	Men employed.		Wages paid.	Ores or minerals mined.	Metals, ores, concentrates or minerals shipped.		Net value of shipments.
		Underground.	Surface.					
METALLIFEROUS ORES.	No.	No.		$	Tons.	Tons.		$
Antimony ore	5	116		59,957	14,947	(a) 938		136,360
Molybdenite	9	262		122,072	13,522	(b) 78		156,461
Iron ores	4	530		576,716	331,822	275,176		715,107
Milling gold ore—								
Bullion shipped								
Concentrates	49	1,304	1,709	3,540,899	1,502,336	21		10,418,052
						9,340		522,409
Silver-cobalt ores—								
Mine bullion shipped						171		3,444,736
Ore and concentrate	32	1,034	1,561	2,450,614	547,882	77,453		9,736,490
Nickel-copper ores	6	875	1,837	2,824,818	1,566,333	1,566,333		11,766,201
Copper ores	12	232	261	293,115	170,666	155,999		1,444,676
Silver-lead and zinc ores		573	1,070	1,803,633	395,802	84,516		4,568,500
Zinc products	84					82,077		1,086,249
Gold-copper-silver ores	59	1,559	1,975	4,395,924	2,907,344	2,431,930		18,544,772
Placer mining—								
Yukon						9		4,413,958
British Columbia								580,500
Alberta								1,695
Total metalliferous	260	14,598		15,867,748	7,450,654	4,684,041		67,536,166
Total non-metalliferous	532	30,541		24,987,562	18,170,207	15,699,830		53,414,983
Total structural materials	816	12,465		6,237,168				17,467,186
Total	1,66	57,604		47,092,478				138,418,335

(a) Includes refined antimony.
(b) MoS_2 contents of concentrates produced.

Mine Production, 1916—Content of Shipments.

—	Gold.	Silver.	Nickel.	Copper.	Lead.	Zinc.	Antimony.
	Ozs.	Ozs.	Tons.	Tons.	Tons.	Tons.	Tons.
Antimony ore							429
Milling gold ore—							
Bullion	519,202	102,349					
Concentrates	30,158	54,136					
Silver-cobalt ores—							
Mine bullion shipped		4,982,702					
Ore and concentrate		15,690,716					
Nickel-copper ores			51,127	25,266			
Copper ores	713	65,438		4,638			
Silver-lead-zinc ores	784	2,582,952					
Zinc products		363,262			27,062		
Gold-copper-silver ores	163,466	905,685				24,249	
Placer mining—				42,126			
Yukon	211,010	47,703					
British Columbia	28,082						
Alberta	82						
Total	954,477	24,794,943	51,127	72,030	27,062	24,249	429

Mine Production, 1917.

—	No. of mines or works.	Men employed.		Wages paid.	Ores or minerals mined.	Metals, ores, concentrates or minerals shipped.	Net value of shipments.
		Underground.	Surface.				
Metalliferous Ores.	No.	No.		$	Tons.	Tons.	$
Antimony ore	1	46		35,739	8,182	361	22,000
Molybdenite	23	501		260,692	26,871	1,554	320,006
Iron ores	9	528		509,163	305,330	215,302	758,621
Milling gold ore—							
Bullion shipped						18	9,312,424
Concentrates	45	1,388	1,633	3,687,392	1,303,410	8,874	365,375
Silver-cobalt ores—							
Mines bullion shipped						318	7,628,740
Ore and concentrates	32	1,079	1,369	2,667,607	527,850	72,719	10,123,838
Nickel-copper ores	6	907	1,737	2,981,896	1,518,783	1,503,841	11,323,808
Silver-lead and zinc ores	87	716	1,198	2,295,090	445,663	46,799	3,866,862
Zinc products						116,489	1,323,985
Gold-copper-silver ores	83	1,730	2,253	4,667,578	2,554,738	1,878,911	16,048,186
Placer mining							
Yukon	69	890		1,337,063		8	3,310,268
British Columbia	34	275		208,589			496,000
Total metalliferous	389	16,250		18,650,809	6,690,827	3,851,194	64,900,113
Total non-metalliferous	763	32,088		31,398,570	18,438,815	15,468,048	63,354,363
Total structural materials	739	10,814		6,609,872			19,837,311
	1,891	59,152		56,659,251	25,129,642	19,319,242	148,091,787

Mine Production, 1917—Content of Shipments.

—	Gold.	Silver.	Nickel.	Copper.	Lead.	Zinc.	Antimony.	Molybdenite.
	Ozs.	Ozs.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
Antimony ore							144	165
Molybdenum ore								
Milling gold ore—								
Bullion	447,373	250						
Concentrates	21,905	99,129						
Silver-cobalt ores—								
Mine bullion shipped		9,248,717						
Ore and concentrates		12,042,990						
Nickel-copper ores			52,587	24,521				
Gold-copper-silver ores	77,599	782,521		40,479				
Silver-lead-zinc ores	1,033	1,670,064			19,348			
Zinc products		465,153				32,328		
Placer mining—								
Yukon	176,548	39,723						
British Columbia	23,994							
Alberta								
Total	748,452	24,425,537	52,587	65,000	19,348	32,328	144	165

Labour and Wages Statistics Covering Non-Metalliferous Mines during 1915, 1916, and 1917.

	1915.			1916.			1917.		
	Number Active Mines or Works.	Number Employed.	Wages Paid.	Number Active Mines or Works.	Number Employed.	Wages Paid.	Number Active Mines or Works.	Number Employed.	Wages Paid.
NON-METALLIC.			$			$			$
Asbestos and asbestic	9	2,394	1,091,076	13	2,821	1,659,913	15	3,114	2,312,110
Chromite	6	204	116,339	12	229	109,146	9	253	211,105
Coal	255	24,574	17,385,200	277	23,611	20,884,236	329	24,596	25,963,520
Feldspar	6	87	21,173	7	119	42,980	8	101	55,742
Fluorspar	5	110	40,643	3	36	8,449	7	50	28,810
Graphite	4	110	18,996	6	344	191,876	5	282	191,307
Grindstones, pulpstones and scythestones	16	1,152	468,612	5	128	24,330	5	92	25,052
Gypsum	4	110	23,607	15	919	467,262	12	774	445,128
Magnesite	23	138	47,372	3	183	144,987	2	296	194,864
Mica and phosphate	4	61	24,197	33	241	86,101	28	283	119,440
Mineral pigments: barytes, and ochres	17	50	23,066	4	125	42,169	7	109	56,185
Mineral water	(a) 88	619	511,967	20	60	30,507	22	53	22,246
Natural gas	1	18	3,200	94	750	532,913	105	597	520,290
Peat	(c)	.....	.....	.....	(b)	.....	.....	.....	.....
Petroleum	7	207	172,986	(c)	.....	.....	168	270	167,205
Pyrites	6	122	78,747	(d) 11	375	310,656	11	454	451,940
Quartz	11	254	186,059	8	167	164,763	12	289	287,817
Salt	10	182	43,886	9	262	219,595	10	309	249,073
All others†				12	171	67,879	8	157	96,736
Total non-metallic	472	30,392	20,257,126	532	30,541	24,987,562	763	32,088	31,398,570
STRUCTURAL.									
Cement	20	1,686	1,184,459	15	1,695	1,307,224	9	1,396	1,424,215
Clay products	349	4,405	1,452,828	290	4,164	1,740,900	276	3,915	2,174,167
Lime	78	633	293,735	76	758	381,365	67	770	554,617
Sand-lime brick	18	177	41,043	15	139	50,079	13	150	65,175
Sand and gravel	241	1,721	491,830	221	1,667	631,195	208	1,562	770,167
Slate	1	20	5,520	1	22	11,085	1	19	10,933
Stone	236	5,144	2,188,302	198	4,020	2,115,320	165	3,002	1,610,598
Total structural	943	13,786	5,657,717	816	12,465	6,237,168	739	10,814	6,609,872
Total non-metalliferous	1,415	44,178	25,874,670	1,348	43,006	31,224,730	1,502	42,902	38,008,442

†Includes in 1915—actinolite, corundum, manganese, talc, and tripolite.
" 1916—actinolite, corundum, manganese, peat, tripolite and talc.
" 1917—corundum, manganese, magnesium sulphate, tripolite and talc.
(a) Estimated for 1915. (b) Included in "All other." (c) Not collected. (d) Partial.